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The business department of THE JOURNAL is on page 150.

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In the various cities the teachers are declared competent by boards of examiners of some kind. In New York city these are the agents of the board of education—the superintendents. In Buffalo a board of five examiners is appointed by the board of alderman; they are to be paid \$500 per year. Supt. Crocker is reported in the *Buffalo Times* as saying that, "We want men of good, sound, horse sense." These men are to examine applicants for positions in the primary, high, and grammar schools. They are "to furnish the superintendent with a list of those who pass over seventy per cent." The examiners should spend, the superintendent thinks, a half day in a school twice a year is too much; that six schools can be visited in a day well enough; that two days twice in a year is enough for the examination of teachers.

Now if the people of Buffalo think that in that way they will attain a good system of public schools they are woefully mistaken. How would these aldermen proceed to select physicians for the hospitals? Would they appoint Thomas Brown, Michael Duffy, Johannes Mulenberg, Ivan Steppenhoff, and Pietro Gonzoles, a board of examiners? No; their "horse sense" would prevent.

Suppose again they wanted men to oversee their electric system; would this board of aldermen select a grocer, a butcher, a baker, a salooner, a politician, to feel of the wires? No their "horse sense" would be too great.

But we do not hold the alderman responsible, we hold the teachers of Buffalo responsible; it is their business to read the book of Esther and ponder upon it, and act in a similar manner.

There is a principle here—the professional teachers of Buffalo should organize themselves into a body and obtain power to declare who shall hold certificates. Let them appoint five of their number to represent them; let them go to the board of aldermen, and offer their services free, if necessary, to perform this work. Besides some unsigned letters in the papers, we do not see that the teachers of Buffalo have stirred out of their tracks in this matter. Those who are in say, "Why should we?" Those who are out say, "It would not help us to get in."

The telegraph tells us that Chas. H. Spurgeon is dead. For how many years he has stood for the right! He has been a teacher in a large and broad sense to a vast number; stating the truth; putting it into a form for practical application: urging people to rise to a higher platform of action; to be ruled by the spirit and not by the sense; to seek after wisdom; to draw inspiration from the Bible; to do good, and to live to do good. All these are features of the true teacher; all these are the

ends to be sought in every school-room in the land. The teacher cannot but feel that one has fallen in the ranks and that all the rest must exert themselves to make the loss good.

The circulation of petitions that Supt. Draper be retained in office is a just recognition of his invaluable services. He belongs to no political party, but like all who tread the educators' path, like Page, Mann, Arnold, Barnard, Harris, belongs to the party who are for educational progress. The legislature of New York could not do a wiser act than leave him to push forward the educational system of the Empire state to higher stages of excellence. Had Mr. Draper done no more than the perfunctory work of his office, we should be glad to see a change made; but we believe that he has shown, each year he has been in office, an ability to deal with educational questions on broad and comprehensive principles. To fail to keep such a man in the public service would be short-sighted action. The legislature must not conceive of Mr. Draper as a Republican, but as a broad-minded Educator, as one who can confer large benefits to our school system. It is by no means an unusual thing that men possessing such special abilities continue to hold their places amid the changes that are effected by politics.

The fact that boys begin to leave school too early has been often referred to. It has been asserted that a desire to go into business was the cause. In visiting the school in Ocala, Fla., the number of large boys was a marked feature. On inquiring of several of the boys the cause, they said it was because Mr. Streater, the principal, was so good a teacher. It appears that he himself teaches these large boys. It will be found, we think, that the absence of men as teachers in the grammar schools is the cause of the hegira of boys from those schools. Boys may be wrong to want a man instead of a woman, but "boys will be boys."

Now that all danger of war with Chile is averted, the question naturally arises, how will the question of damages be settled? It is considered as a great compliment to the fairness of the United States supreme court that a foreign nation is willing to leave the decision of such a case to that tribunal. Next in interest come the doings of Congress. Will they succeed in passing bills to make lumber, wool, salt, and other articles free? What will be the outcome of the silver agitation? What effect will these issues have on the national conventions of the great political parties?

The chief topic in Europe just now is the new commercial compact. Germany, Italy, and Austria (the Triple alliance) started the movement, which contemplates not only lower duties between the nations in the league but protection against warlike neighbors. Switzerland and Belgium have already joined, and Spain, Bulgaria, and other nations will probably become members. France and Russia seem to be left out, and will no doubt suffer greatly by this commercial warfare.

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Editorial Correspondence.

Oviedo is almost in the center of Florida; it is surrounded by orange groves. Near here, on Lake Charm, Dr. Foster, of Clifton, N. Y., has his summer home; he is widely known as one of the early disciples of the "water treatment." I was a patient of his at the New Graefenberg Cure, on the Deer field Hills south of Utica, forty years ago. I remember the fear I had when I first entered the cure, for wild stories had gone abroad of the cold water methods. It was supposed that patients slept in sheets wrung out of cold water, that pailfuls of cold water were daily poured on them, and rumor had it that they "died off like sheep." I found a merry company on the piazza, and took heart—and treatment. I was suffering from congestion of the head, brought on by long continued digging at roots in the Latin, Greek, and mathematical mines. In six weeks I was in perfect health. Dr. Foster has continued his good work for forty years in mental, moral, and physical lines. It used to be said that if he could not cure a person with water, he could by praying. His prayers were often heard from the rooms of patients; believing in prayer, he prayed loud and earnestly, as all good Methodists do.

Returning to Orlando, I visited a small foundry. The proprietor discussed the "race question" from his standpoint. As he stated it the negro needs character—that is, fixed ideas of right and duty; these grounded in a practical way give it grit, pluck, stamina, determination, perseverance.

He had not heard of manual training, but drew his conclusions from his own life. He entered a brass foundry in Connecticut; when young had been made to do things and *see the reason* (this he emphasized); poor jobs were mercilessly criticised. If not well done, "do it over again," was the word. Then the night school gave him a knowledge of figures; the Sunday-school and church kept him out of bad company. His associates were of New England stock, and economical and aspiring; to have a shop of his own was his life's ambition. Here he was in Florida, fulfilling his destiny. Increasing in wealth and held in esteem, he looked back over twenty-five years of effort and generalized that training in head work and hand work at the same time were the essentials of his success, and that they would also be of the negro's success.

In the midst of a driving rain, an unusual thing in winter in Florida, I left Orlando. The educational interests of Orange county are in the hands of a sound man. Col. Beeks is held in esteem as a progressive, clear-headed man. He came here from Indiana, a state that has made a good record in education. The plan of conducting a teachers' institute or county normal school for two or more weeks as a *school* and not as lecture field, will be tried in Orange county as well as in a good many other counties in this state.

Lake county is the new county sliced off the western side of Orange county. Tavares is the county seat. Supt. J. C. Compton was found in his office; he is a bright and energetic man and held in esteem by both teachers and parents. My stay here was brief. The town is on lake Eustis, but it is all in the rough as yet; five railroads run through it, and there are rainbow hopes as to its future. We passed Leesburg, and at Wildwood were taken up by the "Flying Cracker," a fine train that is run between Tampa and Jacksonville, by the Florida Central and Peninsular R.R.

Ocala, the main town in this lake region, is full of activity—it aspires to grasp the capital away from Tallahassee, on account of its size, importance, and central position. The schools here have increased wonderfully since my visit four years ago; there were then about 150 white children in attendance; the building was poor and the interest small. Now there is a fine new building, and over 400 white children in the school. In fact, the expansion of the public school system in Florida, is really phenomenal.

Prof. J. M. Streator, the principal, assisted by his wife and seven teachers, is doing a fine work. There were young men and women in the higher departments of the

school, an uncommon thing in years past; there was intelligence in their bearing, courtesy in their manners. I was surprised at the rapid progress of things here. The public school is really held in high esteem—something not easily accomplished in the South; there they have been accustomed to think the free school the place for the poor whites; the private or pay school, the place for all decent whites.

Prof. Streator exhibited the operation of the fire signals; two taps of the bell, and all marched out in good order in two minutes; one tap and they all marched back. Fires are quite common here in Florida, and the idea of teaching what to do, should it occur, is a good one.

The building for the colored youth is a new one also; there are six teachers; the principal, Mr. H. W. Chandler, is a bright man from Maine, where he received a good education. He finds a good many obstacles. Both of the school buildings are mortgaged! The buildings are put up by subscription generally! But Ocala will not let either be sold.

I made a visit to the phosphate mines in Citrus county, some thirty miles west of Ocala, where I found a gifted artist who has done much to illustrate the books in use in our schools. On the walls of her house were the skins of several rattlesnakes—one six feet in length. This reptile is not particularly held in aversion; the moccasin, however, is.

How new and wild the country is here! How little to attract! The insect life is too abundant; fleas, mosquitoes, and gnats abound in the summer. New comers have the intermittent fever; some become acclimated, and some do not. Do not envy the inhabitants of Florida too much, you in the northern snow drifts.

Ocala.

A. M. K.

Immanuel Kant as a Pedagogue. II.

By PROF. LEVI SEELEY, Lake Forest, Ill.

We are not to think of Kant as an author of pedagogical works; indeed he has left behind no complete work on pedagogics, nor did he evolve a system of education. But his teachings are found scattered throughout his other works, in his lectures, being largely recollections of his own experience as a teacher, or, perhaps it were better to say, theoretical and practical principles derived from that experience. This was not from lack of interest in the subject, for he says in one place, "The great secret of the perfection of human nature is hidden in education, and it is pleasant to think that human nature is destined to become ever better by means of education; this opens to us a prospect of a happier condition of the human family." It now remains for us to show the pedagogical teachings of Kant as collected from the various sources at hand. Let us study them in order:

1. Parents from the very nature of the marriage relations have the right and it is their duty not alone to feed and care for their children, but also to prepare them to care for themselves in the future, and to give them a moral basis of action. Man is the only creature that must be taught how to take care of himself, the lower animals knowing how to do so by instinct. The child can come to real manhood only by means of education; he is nothing except what education makes him. The animal knows from the first how to take care of itself, while the child must be cared for, trained, and directed for years. By this is asserted the natural necessity of training; it is natural for the child to be trained in order that he may become a man. Without education man is but an animal; education transforms his animality into humanity. But education, however necessary to his well-being, cannot be attained without the help of others; hence the necessity of intelligent parents, of teachers, and of other instructors.

2. Children must be trained not with reference to the present, but with reference to a probable better condition of the human family. In a word they must be

educated having in view the idea of humanity and its destiny. No narrow view of education which considers the child without reference to the world, is to be tolerated, but the good of the child from the broadest standpoint is to govern its education. Thus every parent easily recognizes that his advantages of a generation ago are not sufficient for his son who is to enter upon the stage in the next generation.

3. Education must be cosmopolitan in its aims. It must not simply seek to prepare one to earn his daily bread, not merely utilitarian, but broad and far-reaching, unselfish and humanitarian. The utilitarian idea had obtained a very strong hold upon the German schools very much as it has at present upon the American schools, and Kant rendered no greater service to the world than when he led the German educators to break away from this idea. Of course he would have every child learn how to take care of and provide for himself, but he would not measure or limit his culture by any such base standard.

4. Pedagogics treats first of physical education. To this belongs the bodily care as of little children, and the discipline and culture of the senses and other organs. Secondly, it treats of practical education under which Kant includes instruction, pragmatic culture and moral training. By pragmatic culture he means practical education having special reference to happiness. He urges proper food and clothing giving many suggestions that are valuable for parents, and of a most practical character. Food and clothing must be of such a character as to make the child hardy and strong. Such food as is demanded by the needs of the body, given periodically and in proper quantities, and such clothing as does not hinder the freedom of the body nor keep it too warm, are recommended as a means of securing good dispositions and preparing for happy lives. Herein lies an important lesson which all parents should learn, and which is not without its significance to teachers.

5. Kant's ideas of school morality are interesting. As in his philosophy, he bases it upon maxims. These maxims must arise within the child himself and all moral culture should seek to establish such maxims. The child must be early given an idea of right and wrong, and in all things certain plans and certain laws must be given him which he is required to follow with great accuracy and strictness. These laws are at first school maxims and afterwards maxims of humanity. By this means the formation of character is attained, which consists in the ability to act according to definite maxims. It is not expected, however, that this shall be the character of an adult, but of a child.

There are three things necessary to the formation of character: 1. Obedience, which must be absolute and unquestioning. The child must learn to obey authority in school in order to learn to respect law as a citizen, even if the law does not meet with his approval. 2. Truthfulness, without which there can be no such thing as character. Kant says with greatest emphasis: "The truth must under no circumstance be forced from children by means of punishment." They must be taught to love the truth and not to be moved by fear. 3. Lastly, the philosopher mentions cheerfulness and sociableness as essential to character. For it is the gladness alone that is capable of pleasure in the good things of life.

6. Unlike Rousseau, Kant taught that the child must early be taught about God, though he would not teach him doctrine; in a word the child should be taught religion, but not theology. Morality should precede religion, but should not be divorced from it.

These are some of the important teachings of Kant in pedagogics. He believed that education is an art, a profession, and the problem of education is the greatest that can be given to man.

Learn these two things—never be discouraged because good things get on so slowly here, and never fail daily to do that good which lies next to your hand. Do not be in a hurry, but be diligent. Let patience have her perfect work, and bring forth her celestial fruits. Trust to God to weave your little thread into a web, though the patterns show it not yet.—GEORGE MACDONALD.

Children's Libraries.

By GEORGE GRIFFITH, New Paltz, N. Y.

Some years ago, while superintendent of the schools in one of the cities of New York, I found myself one day in a neighboring city with a few hours to spare. These hours I spent in visiting one of the public schools of the city. It was a small school in an illy-constructed building, and my impressions of the general atmosphere and conduct of the school were decidedly unfavorable; but I then received a suggestion which I afterward developed and applied in my own schools. This suggestion was the formation of "Children's Libraries." As I look back over my three years' work in that city, I verily believe this move was the best single service I was able to render those schools during my superintendency.

Calling my principals together, I laid before them a plan for the formation of such libraries. The following is the main outlines of

THE PLAN.

1. Have the teacher of each grade from and above the third or fourth year, try to interest her pupils in the formation of a small library of suitable reading for their own grade room, to be owned and used by that grade. A few ways of securing these libraries were suggested, but many more were devised by inventive teachers. Here are a few such ways. The teacher contributed a volume or two—perhaps somewhat worn. Children from well-to-do families were asked if they did not have some good books that they had read and that they were willing to contribute. Others were asked if they did not have files of the *Youth's Companion*, *St. Nicholas*, *Harper's Young People*, or similar periodicals that they would contribute. Committees of pupils were appointed to solicit such books or periodicals from their friends. A little box constantly stood upon the teacher's desk to receive some of the spare pennies of teacher and pupils, and, as soon as there was sufficient in the box, a new book was bought, or a periodical subscribed for. Simple and pleasant entertainments were gotten up by the school, to which an admission fee of five or ten cents was charged, the proceeds being used to increase the library.

2. Keep these libraries each in the room of the grade owning it—for the pupils were distinctly to understand that the libraries were theirs. Have the pupils in turn act as librarians, but allow all the freest possible access to the library consistent with their other duties. Encourage pupils to take books or papers home to read.

3. By suggestion, hint, or as a last resort, by more positive influence, see to it that no objectionable books or papers remain in the libraries.

4. Have the teachers keep a general knowledge of what each pupil was reading, and, by encouraging the desirable and suggesting another line of reading to those going wrong, the teacher should strive to form in the pupils good reading habits.

With an alacrity, zeal, good sense, and tact rarely equaled, the teachers took hold of the matter. Pupils and parents responded generously. In a few weeks quite respectable libraries were formed in nearly all the school-rooms of the city except the lowest grades. Printed labels were sent out from the office for use in all the schools.

After the work was well under way, the following circular was sent to all the teachers:

CHILDREN'S LIBRARIES.

Objects or Ends to be Striven for.

First and mainly, the cultivation of a taste and desire, on the part of your pupils, for good, strong, and healthful reading. Spare no pains to secure this end. The whole trend of your pupil's life may depend upon it.

Secondly, supplying good reading matter to those who do not have it at home.

Thirdly, supplying profitable and enjoyable work to pupils when their lessons are prepared, and thus

Fourthly, providing a proper and powerful incentive to the study of lessons.

CAUTIONS.

1. Be *very careful* of your selections in view of the first object mentioned above.
2. Do not let it detract from interest in, and application to, regular school-work. It should add to these.
3. Guard carefully that this reading does not lead some pupils to omit the out-door exercise which their health imperatively demands.
4. Be on your guard against a spasmodic excitement, on the part of pupils, at starting the work that may detract from a lasting interest.

GEORGE GRIFFITH, Supt.

Now for results so far as they were revealed to me. How fully the first end suggested above was attained, time alone can tell. Quite a number of teachers were very positive that they saw hopeful beginnings. It was stated by several that many of their worst pupils became most deeply interested. Several individual cases came to my knowledge where boys from the most degraded homes became persistent readers of the best books from these libraries, noticeably biographies, attractive histories, and books of adventure. Repeated instances occurred where such boys spent their whole noon intermissions reading such books. The testimony of teachers was unanimous, that pupils whose homes were poor and nearly devoid of good literature, were the most constant patrons of these libraries.

In nearly all school-rooms it was a rule that any pupil who believed he had his lessons was at liberty to go to the library without special permission, take a book or paper to his seat, and read. Pupils constantly took advantage of this privilege. How much mischief and disturbance was thus hindered, only those can estimate who recall the amount of mischief an idle pupil can find inside of any five minutes. If, as sometimes happened, a pupil spent his time in such reading and subsequent recitation showed he had not sufficiently prepared his lesson, that individual was deprived of the privilege for a period. Thus, the use of the library became an aid to the regular school-work.

The records of the pupil librarians showed hundreds of books, magazines, and papers in each room, taken home over night by pupils to read.

By having the library so immediately under her eye, the teacher knew better than ever before what kind of books her pupils read. Thus, she had the knowledge, and found the opportunity, wisely to influence this.

The libraries were in daily use in the recitations, furnishing selections for the reading class, or information for the geography or other classes.

About one year after its start, a report from the various schools showed about 600 bound volumes, 700 or 800 numbers of magazines; besides a good many files of such papers as *The Youth's Companion* had been thus gathered by about twenty or twenty-five classes. From the start I opposed any assistance being given by the board of education. I believed the pupils would be more interested in, and would work harder for, the libraries, if these libraries were distinctively known as their own.

The work has become permanent in the schools. Though over seven years have passed since it was started, I see occasionally now accounts in the city papers of entertainments held by the pupils of some of the schools to raise money for "The Children's Libraries."

Materials and Devices.

By A TRAINING PRINCIPAL.

One result of the revolution in educational thought is to rouse a feeling in teachers that unless they wish to be considered behind the times they must do something in their schools which they have never done before. This impulse is certainly in the right direction when controlled by intelligence, but it often happens that new attempts have no basis in sound principles.

Perhaps the best illustration of this tendency is found in the materials and devices which teachers use in their school-work. Without an intelligent comprehension of

the use of the concrete, they learn that this teacher and that are using such and such material or device, and, determining not to be outdone in this respect, they begin to make a "collection." No antiquary collects with greater zeal. This is, indeed, progress!

Beans, spools, buttons, shells, and an incongruous lot of rubbish "lend a hand" in number-teaching. Charts whose number and kind are legion, with varying degrees of complexity, and on various subjects, are manufactured at the expense of the teacher's time and money. The intricacies of many of these charts are "past understanding," to those teachers who do not make them. What must they be to the children?

The æsthetic germ is started into growth by advertising cards, which are dealt out to do service as "busy work." Elementary science is supposed to thrive upon pictures of flowers and plants of an abnormal growth.

Language lessons are given from pictures whose design and coloring defy every artistic sense.

Time is spent (and wasted) in an attempt to add to the attractiveness of material, by finical construction and decoration. In many school-rooms this craze runs riot. And, worse than all the rest, there is no "method in this madness."

The amount and kind of devices are not only objectionable as being confusing and demoralizing, but their use is not educational. With such a cumbrous amount of machinery, how can the teaching be other than mechanical? And certainly if the true aim of a device is not clearly understood, the teaching must degenerate into mere stereotyped tricks.

Now the question may be asked how a teacher is to know what device to use. A pertinent answer is found in Mr. Parker's article in *THE SCHOOL JOURNAL*, Dec. 5. He says, "The methods and means of teaching, including apparatus and all appliances used by a teacher, equal that teacher. In other words, the knowledge and skill of a teacher determine the means he applies." He proceeds to state that a poor teacher and a good method are incongruous. That is to say, a teacher must have knowledge and skill if he uses devices intelligently and to a good purpose. He must have a clear understanding of the end to be gained by the use of a device. Perhaps a common mode of procedure has been to use the device and trust to luck for the result.

The answer to the above question becomes weighty with meaning. In order to know how to make a choice of material or device, a teacher must be full of the subject he is to teach, must know the laws of mental growth, and must be skilled in his work. The question seems so simple! But the true answer is the one which answers every other question pertaining to a teacher and his work.

To young teachers who cannot at once comply with the above conditions a few suggestions may be helpful.

First of all, clear away the rubbish. Empty desks and cupboards of the dusty trash stored in them, and begin again.

If you cannot wait for appliances to grow naturally out of your work, adopt none of which you do not know the meaning.

Use appliances approved by teachers who know what they are doing.

Use such as are simple in design, and not elaborate and finically decorative.

Let there be a certain dignity in the material used. Children enjoy the dignified. This is proved by the fact that material or device devoid of character rouses no prolonged interest in the minds of children.

In a recent address before the Eastern Kindergarten Association in Boston, Dr. Samuel Elliot said, "In the natural and inevitable reaction from hard ways we sometimes see what might be termed a little educational 'slush.' We need, as the poet says, 'Sparta's stoutness as well as Bethlehem's heart.'"

His caution applies with force to the choice and use of material.

Be sparing in varieties of material. Too many kinds confuse.

Try to discover the time when the stimulus of a device is not needed.

At the present day when deeper insight into mental laws tends continually to overturn existing methods, it cannot be said that any appliance has become a perfect means to a desired end, but the best of its kind will often prove very helpful.

Now, as a rule, home-made appliances are not the best. They are less perfect in their construction, less durable, mean less, and are apt to be unsightly or finical.

All the "extra" material needed in a primary school, outside of that which pertains to drawing, may be obtained at a trifling expense of most any dealer in school appliances.

Certainly the matter of school-material, *when well thought out*, is very simple indeed, and having once thought it out, no teacher need be without it when endowed with a little persistency, and perhaps a little generosity.



The School Room.

FEBRUARY 6.—LANGUAGE AND THINGS.
FEBRUARY 13.—EARTH AND SELF.
FEBRUARY 20.—NUMBER AND PEOPLE.
FEBRUARY 27.—PRIMARY.

Ten Lessons in Manual Training.

By GEO. B. KILBON, Principal of Manual Training School, Springfield, Mass.

LESSON V.

EXPLANATION OF THE DIFFERENCE BETWEEN SLITTING AND CUTTING-OFF SAWS.

Provide for the teacher two models in wood, one of a slitting and one of a cutting off saw. These may be each 30 in. x 3 in. x $\frac{1}{2}$ in., the slitting teeth $2\frac{1}{2}$ x $1\frac{1}{4}$ and the cutting off teeth 2 in. x $1\frac{1}{4}$ in.

Problem 1. Slitting Saw.

Take a board 4 in. x 2 in. x 5-16 in.; on one side of it gauge two lines $\frac{1}{2}$ in. and $\frac{3}{8}$ in. respectively from one edge, as in Fig. 1.

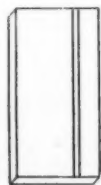


Fig. 1.

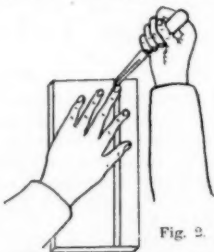


Fig. 2.

Place the chipping block on the bench and lay the board on it with an end toward you, guiding the chisel edge with a finger of the left hand. Hold the $\frac{1}{2}$ in. chisel in the right hand exactly vertical, as in Fig. 2, with the beveled edge away from you, and cut between the gauged lines a chip about 1-16 in. long and entirely through the board from its upper to its lower side, as in Fig. 3.

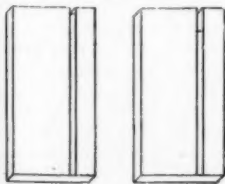


Fig. 3.

Fig. 4.

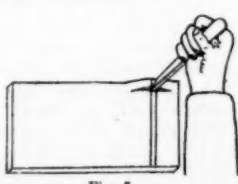


Fig. 5.

Continue in this manner to cut successive chips, each of about 1-16 in. long, and each entirely through the thickness of the board, until the slowest workmen have made a cutting about $\frac{1}{2}$ in. long, as in Fig. 4. This cutting is called a kerf.

Rapid workmen will have made a kerf nearly or quite the length of the board.

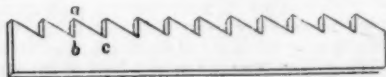


Fig. 6.

If we should make two lines crosswise of the board and en-

deavor to chisel between them as above, we could not make a kerf but should splinter the board, as in Fig. 5.

Fig. 6 shows the wooden model of a slitting saw.

Its teeth are a succession of chisels. The front edge of each tooth, as *ab*, is at right angles to a line touching the points, and all of the slant is on the rear edge as *ac*. From the above experimental problem it is manifest that such a saw is suitable for slit sawing only.

Problem 2. Cutting-off Saw.

Take the board used in the previous problem, or one similar to it, and using try-square and knife, make two lines across the board 1-16 in. apart, the right hand line being $\frac{1}{2}$ in. from the end, as in Fig. 7.

Lay the board on the chipping block, holding it with the left hand. Hold the knife as a pen is held in writing. Incline it toward you about 30° from a vertical position, as in Fig. 8, but do not incline it at all toward the right or left.

Draw the knife across the board along one of the above lines, and then along the other. Continue to do this alternately, and what happens? "The wood splits out between the lines, making a kerf." If we proceed in this manner the board will soon be cut in two.



Fig. 7.

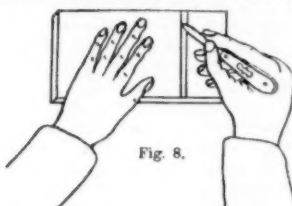


Fig. 8.

A kerf can not be cut lengthwise of the grain by this process, because the wood will not split out between the lines.

If we had a knife with two blades of equal length and 1-16 in. apart, we could draw it through both lines at the same time.

Fig. 9 shows the wooden model of a cutting-off saw.

Its teeth slant about equally on each edge and are beveled so that alternate teeth are pointed on one side of the saw, the intervening teeth being pointed on the other side.



Fig. 9.

Its use produces a result quite similar to the above experimental problem with the knife, that is, marking two parallel lines across the board and breaking out the wood between them. The teeth of a cutting-off saw may then be considered as a succession of pairs of knife points.

Another important fact concerning saws is that the teeth are "set," that is, alternate teeth bent toward one side, and the intervening teeth bent toward the other side. In the cutting-off saw the teeth which are pointed on a given side are bent toward that side, as in Fig. 10.

The object of this is to have the saw cut a kerf wider than the thickness of its blade, in order that the saw may pass easily through the kerf which it is making. Owing to this setting and to its beveled filing, a cutting-off saw appears grooved along the line of teeth when viewed endwise, as in Fig. 10. Hold the model inclined, as in Fig. 11, and a straight rod, 10 in. long x $\frac{1}{2}$ in. diameter will slide down this groove. An ordinary needle will slide down the teeth of a cutting-off saw in a similar manner.



Fig. 10.

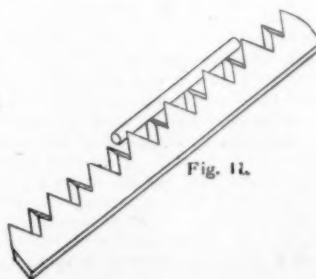


Fig. 11.

Each pupil may take in hand the two saws on his bench, examine them carefully, and hold the slitting saw in his right hand and the cutting-off saw in his left.

Very few pupils will fail to make the selection accurately after the above experimental description.

Though I have seen able men who were not industrious, I have never seen a really great man who is not so, and when I hear a young man spoken of as giving signs of great promise the first question I ask is, "Does he work?" — *John Ruskin.*

Hints on Teaching Spelling.

By JAMES H. PENNIMAN, De Lancey School, Philadelphia, Pa.

In teaching how to write English, and especially in teaching spelling, little progress has been made, and, notwithstanding its acknowledged importance, probably no other subject is taught so poorly. The spectacle of an otherwise well educated man chained, so to speak, for life to a dictionary is by no means uncommon, while the mortifications that are undergone by those who are unable to spell correctly outnumber those that arise from any other kind of ignorance.

Whatever a man may or may not know, we expect him to know how to spell. The first thing that an applicant for a position is usually made to do is to write a note, the expression and spelling of which are important factors in the estimate that is made of his ability. Yet, though the old-fashioned spelling-book with its interesting but misplaced information about everything from the multiplication table to the signs of the zodiac has fallen into disrepute, the advancement made in methods of teaching spelling does not compare with that which, for example, has been made in teaching geography.

Experience has shown that, though necessarily great, the difficulties of English orthography may be lessened and utilized for mental discipline by a recognition of certain facts which it is believed will readily appeal to the thoughtful teacher.

Many of the most difficult words are used so infrequently that it is a waste of a child's mental energy to cumber his mind with them. Why should a spelling-book contain words like *chameleon* or *therapeutics*?

On the other hand, a child that can read learns all fairly easy words by unconscious absorption; these should therefore be omitted from the spelling lesson. Disregarding the unusual words and the easy words, there remains a class of common words which are continually misspelled; words like, *which*, *separate*, *together*, *truly*, and *until*. It is on such words that attention, which Lowell calls "the mother of memory," should be concentrated.

Having then a list of the words which experience shows are most frequently misspelled, let us look at the way in which they should be arranged for study. They should of course be graded so that the easier words in spelling and in meaning come first, and they should not be arranged so that words of a like combination of letters come together. It would be a waste of the learner's time if, for instance, in one lesson were grouped a number of words in *ei*, and in another a number of words in *ie*: in one lesson words in *ceus*, and in another words in *cious*. To study lessons thus arranged fosters habits of inattention and inaccuracy, and experience shows that while such lessons are readily learned they are quickly forgotten. W. T. Harris, United States commissioner of education, has strongly objected to such a classification, saying that it induces "paralysis of the memory."

Having now graded the comparatively small number of common, difficult words of which we have spoken, let us think of the best methods of learning and reciting them. That the spelling exercise should usually be written is a fact now generally recognized, and that no child should learn to spell a word of whose meaning and pronunciation he is ignorant we believe to be self-evident.

The habit of working accurately and thoroughly is more important than any lesson to be obtained from a school-book. It is better to do a little well than a great deal in a careless or slovenly manner. The lessons should therefore not be too long, and neatness of work should be insisted on.

For each misspelled word so large a proportion of the perfect work should be deducted that ten words missed in a lesson of twenty-five or fifty will give a failure for the exercise. It is better that the spelling exercise books be corrected by the teacher, and a little experience will enable one to do this work rapidly. The mistakes should merely be checked and the first minute or two of the time allotted for the following spelling exercise should be devoted to the correction by the pupil of the words he has misspelled. These words should be entered correctly in a small note-book which every pupil should keep for the purpose, and a review of the words that each has misspelled may be considered a part of the regular lesson. A reputation for bad spelling is usually gotten by the habitual misspelling of the same words, so that much importance should be attached to these individual reviews.

They can be recited most quickly orally, the pupils being called on one by one after the class have written the lesson for the day. Though the class be a large one it is possible to do this without taking up much time, for it is not necessary at such a review to call on every pupil, or to have every one that is called on recite all his misspelled words, but enough should be heard to make sure that all have studied properly these most important words. While this review is in progress the class may write an exercise or story showing the appropriate use of the words in the lesson that are difficult to define. A few of these exercises may be commented on afterwards by the teacher and the class. They will frequently be found to show curious mistakes that it would not be easy to detect in any other way, such as, "*He made the ascent up the hill*," "*He is a valid lawyer*."

Another way of employing this time is to have each pupil make on a slip of paper a list of those words in the review lessons whose meaning he does not understand. One should then be called on for a word on his list and any one who has not noted the same word should be held responsible for its definition.

A little thought will suggest pleasant and profitable ways of varying the regular routine. Write on the blackboard, for instance, a root word like *creed* and by questioning get some one to tell you that it means belief, then call for other words that contain the same root and perhaps a dozen words such as *credit*, *credulous*, *credible*, and the like, may be obtained. Now take up these words, one by one, and show how the idea of belief runs through them all; for example, *credit*: Unless we believe in a man we cannot trust him, and if we do not trust him we cannot give him credit. An exercise conducted as above where the class tell you what *they* know, instead of your telling them what *you* know, will arouse more interest and make more lasting impression than a dozen lessons from a book of etymology.

It is sometimes well to devote a part of the time to explaining the pronunciation and meaning of the words in the next lesson, for often a child has difficulty in understanding the dictionary definitions and the home work should be made perfectly plain. Worcester's primary dictionary should be among every child's school books; he should be taught to use it, and will prize the knowledge to obtain which he has had to exert himself, more than lists of definitions made for him in the spelling-book. He should early be shown that the meaning of a word is controlled by its use in the sentence, as, for example: The hat is *black*; *they black* the boots; the *black* killed his enemy.

Where a long review lesson has been assigned the entire class, it is better to have it recited orally, and the closest attention may be secured by requiring the scholars to correct mistakes without having their notice called to them by the teacher. One, for instance, has misspelled his word, the teacher without apparently observing the error gives another word to the second boy, who spells it correctly, but does not notice the mistake that has been made; when, however, a boy corrects the word, the error is counted against all who have passed it. Of course, when a mistake has gone around the class without being noticed, the teacher should call attention to the fact.

The above are a few methods that have proved successful, they may require adaptation to suit particular cases, and other methods may be shaped out along the same lines. Spelling perhaps calls for more personal effort on the part of the teacher than any other study, and he who can arouse interest in a spelling lesson need not fear that his other classes will be dull.

The Talking Teacher.

By SUPT. J. M. GREENWOOD, Kansas City, Mo.

1. How much should I talk in school? 2. Do I talk too much? If so, how shall I remedy it? 3. Do I talk more than is actually necessary in my regular work?
4. Do the children always listen attentively when I am talking? If any of them become tired, what reason or reasons can I give?
5. If I do all the talking, what mental faculties of my pupils are cultivated? Are any faculties neglected? 6. In what respects, then, are my methods defective?
7. Do I talk as much as all the pupils of my school? Should they talk more? 8. What solid reasons can I give for talking so much? 9. Is my language such as my pupils can readily understand?
10. Do I prepare myself specially for each day's talking? 11. Do I repeat year after year the same anecdotes? 12. Would I tire of hearing another person tell them?
13. Is my voice well modulated and pleasant to the ear? 14. Do I scold much? Am I aware of it? 15. Do I express scorn and contempt when school affairs displease me? 16. Do I pronounce correctly all the words I use? 17. Are the words I use to the pupils such as I would have another person use when speaking to me? 18. Do I call the children nicknames? 19. Do I ridicule them? Do I wound their feelings? Why?
20. Do I practice deceit in my language to my pupils? 21. Do I talk without a purpose in order to "kill time"? 22. Do I go to others to talk about my associate teachers?
23. Am I a tale-bearer? If so, "have my own chickens yet come home to roost?" 24. Can I build myself up by talking others down? 25. Do I know any person that ever got into trouble by talking too little? 26. Did I ever get into trouble by talking too much?
27. Have I tried to put myself in the place of those to whom, or about whom, I talk? 28. What do I think of it?
29. Have I cultivated my voice so that it is pleasant to the ears of others? 30. Is there any worse fault than talking too much in school? What is it? 31. Am I hired to talk, and do I intend to do it? 32. What effect does my talking have on my pupils? 33. Have I the honorable title of "Talking teacher" in my school?
34. Do I talk by thumping the bell, and causing it to jingle violently and incessantly?

35. Do I talk by striking my pencil with tremendous violence against my desk, and then talk besides at the same time?

36. Will I stop and make out a list of reasons why I should talk as much as I do?

37. Will I make out a list of reasons why I should talk less?

The Reading Class.

1. The effort of the teacher must be to accomplish something far beyond developing the power to call off the words of the lesson, pausing at commas, letting the voice fall at periods, etc.

2. The reading lesson must arouse the activities of the pupil; it must demand that he think deeply and earnestly.

3. Not only must he think then and there, but he must be put on the road to thinking when he leaves the class, when he leaves the school, when he goes out into life; this is the "royal road" of which so much is said.

4. To cause this activity on the part of the class, there must be activity on the part of the teacher—mental activity, not the loud talking, not the bustling-about kind that is often supposed to be activity. This is activity, but it is physical activity.

5. There will then be questioning, for in this way mind acts on mind and so acted long before Socrates proposed the method named after him.

The questions on reading will be of three kinds: those pertaining (1) to meanings of words, (2) those pertaining to structure—this is the rhetorical field, and (3) those pertaining to the interior meaning, the thought, the spirit.

Suppose these three stanzas (don't call them *verses*) from Byron's *Childe Harold's Pilgrimage* have been given out for study; questions like those below will be given, only twice, thrice, or ten times as many.

Here let it be noted, that the pupils should furnish questions. I would say let the questions of the pupils be first presented; let them be written out. Let one ask his questions; as they are answered let the others check these off. Let another ask those not checked off, and so on. When the pupils have done their best let the teacher try his hand. Don't ask petty questions.

1. Clear, placid Leman! thy contrasted lake,
2. With the wild world I've dwelt in, is a thing
3. Which warns me, with its stillness, to forsake
4. Earth's troubled waters for a purer spring.
5. This quiet sail is as a noiseless wing
6. To waft one from distraction; once I loved
7. Torn ocean's roar, but thy soft murmuring
8. Sounds sweet as if a sister's voice reproved,
9. That I with stern delights should e'er have been so moved.
10. It is the hush of night, and all between
11. Thy margin and the mountains, dusk, yet clear,
12. Mellowed and mingling, yet distinctly seen,
13. Save darkened Jura, whose cap heights appear
14. Precipitously steep; and, drawing near,
15. There breathes a living fragrance from the shore,
16. Of flowers yet fresh with childhood; on the ear
17. Drops the light drip of the suspended oar,
18. Or chirps the grasshopper one good-night carol more;
19. He is an evening reveler, who makes
20. His life an infancy, and sings his fill;
21. At intervals, some bird from out the brakes
22. Starts into voice a moment, then is still.
23. There seems a floating whisper on the hill,
24. But that is fancy, for the starlight dews
25. All silently their tears of love instil,
26. Weeping themselves away, till they infuse
27. Deep into nature's breast the spirit of her hues.

I. Who was the writer? What was Byron? Where was this written? What other contemporary writers? What great events about this time in Europe? in America? What is Byron's standing as a man? as a poet? Who criticise him? What is their estimate? What has he written beside this poem? How many stanzas in *Childe Harold*? Where is Lake Leman? Is this its usual name? Why is this name used? What is the special feature in a lake? Meaning of placid? To what do we apply the word? What is the lake contrasted with? What warns him? What is the purer spring? What is the distraction? To what is the lake's murmuring likened? (10.) Where is the mountain? Meaning of mellowed? What is Jura? How are the flowers described (16)? What is a reveler? How "an infancy"? What are "brakes" (21.)? Have you observed that? What is the "floating whisper"? What is "fancy"? Do the dews distil "tears of love"? What is "Nature's breast"? What "spirit of her hues"? What is the emphatic word in lines 1, 2, 3, etc.? Where should there be pauses in reading lines 1, 2, 3, etc.?

II. What kind of writing is this? What is poetry? Must there be rhyme? How many feet in a line? How many lines in a stanza? What lines rhyme? What kind of verse is this? What other poet has used it? Is it difficult—more difficult than long meter, for example? Where is the accent in each line? Could

we say "dark, morose Leman"? Why "I've" instead of "I have"? Why not (3) say renounce, instead of forsake? What then is a limitation of poetry? What figure in 4? in 5? In line 9? What variation from the other lines? In 17, what do you say of "drop" and "drip"? Is this striven for by poets? Why?

III. What is Byron's thought, simply to describe this scene, or to use the described scene to portray his own mind? Why should one if unhappy tell it to others? Does he seem penetrated by the beauty of the scene? Where does the influence of the scene seem to reach him (5)? Must one not be alive to the scene to write lines 15, 16, 17? Does the poet note the minute things often unseen by others (18)? Is the poet's imagination stirred? (23, 24, 25, 26, 27.)

Suggestion: It will be a good thing to learn these lines. Certainly to get the effect of this splendid poetry into the heart and mind it must be well understood; close study of it makes learning of it easy. Let the teacher ask a pupil if any of the occurrences of life suggest any of these lines. One will say the chirp of the cricket reminded me of "or chirps the grasshopper one good night carol more." Another will say when I was going home a bird sang in the bushes and I thought of the lines,

"At intervals some bird from out the brake,
Starts into voice a minute, then is still."

"Does teaching pay?" Let the teacher with a class of boys and girls study up these lines with all their hearts, stop a moment to ask and answer this question and will say, "I am just as happy as I can be—it pays in happiness." Let another who has not yet arrived at the place where he can read poetry to mold the immortal life and he will doubt whether teaching pays—because he is not yet teaching.

A Lesson on Conjunctions.

By H. G. SCHNEIDER, B. S., New York City.

Here is a car coupler—one of the ordinary kind, of the elliptical-ring shape, used to hold freight cars together with a pin passing through holes in the bumpers on each car.

James, your father works on the elevated road; what sort of coupler do they use there?

"The coupler is on one car, and, as a pin, they use a movable tooth on the other car which falls into place when the cars are backed into each other."

Mary, you have traveled on the "Limited;" tell us how the cars of a vestibule train are coupled.

"There seems to be a part of the coupler on both cars, sir, and after the cars have been brought together the moving of a lever locks the parts together so that it is almost an automatic coupler, like the one James described."

Now, scholars, just as the cars of a train are coupled so the different words, phrases, and sentences we use are coupled, but instead of calling the coupling words couplers we call them conjunctions. See if you can make sentences using conjunctions to connect different words. Thus join these two statements in one sentence:

Hamilton was a statesman.

Jefferson was a statesman.

Alice, how would you arrange that?

"Hamilton and Jefferson were statesmen."

What has she done, Will? "She has joined two names by the word 'and.'"

How else can you unite the sentences, George? "Hamilton was a statesman as well as Jefferson." Which is the better? "Alice's; because it is so much shorter." Try these:

Hamilton wrote the plan for our Constitution.

Hamilton was shot by Burr in 1804.

"Hamilton who wrote a plan for our constitution, was shot by Burr in 1804."

What is the coupler here? "Who."

Is there any difference between the coupler "who" and the coupler "and"?

Hands up! Well, we have a few thinkers. James. "'Who' does something besides join sentences; It is the subject which the verb wrote tells about, while 'and' only joins the two sentences."

Very good; now you see, scholars, that grammatical couplers are like the railroad couplers; the "and" kind like the one on my desk and the "who" kind like—? "Like those on the elevated road; a coupler on one car but depending for its hold on the tooth on the other. But, James, explain the "tooth" of our sentence."

"Why 'who' depends on Hamilton for its meaning." Right. Now look at the coupler in this sentence.

"When this is gone, our swords shall buy more gold."

What is the coupler, Mary? "The word 'when.'" Now "when" belongs to "is gone" and also tells the time swords "shall buy." So it's like the coupler on the "Limited" belonging to both cars.

Now in this sentence:

"Romans in Rome's sorrow
Spared neither land nor gold."

Land and gold are connected by what?

"Neither" and "nor." A conjunction in two parts. Your grammar calls them correlative conjunctions. Now one more thought and we shall finish our lesson. A coupler you will notice allows the car to come just so far together and no further; it can be regarded as holding them apart, so in this sentence:

"Private men's griefs are soon allayed,
But not a king's."

The "but" seems not so much to connect as to separate the ideas; hence the grammar calls it a —? "Yes, sir, disjunctive conjunction."

Now, scholars, take your grammars and find what Mr. Brown says of conjunctions; then take your readers and see what sentences you can find to illustrate the ways of joining sentences.

Fermentation. I.

By RUTH E. LANDER, Brookline, Mass.

Exp. I. Examine a grape for its principal parts, skin, pulp, seeds, juice (ferment, color, and taste). Tell its uses.

Exp. II. Examine molasses for its color, taste; compare with other liquids (water, milk). Uses.

Exp. III. Examine yeast in the same way, note its odor. Give its uses.

(A very good yeast may be made from potatoes by the pupils. A recipe may be readily found in any cook-book.)

Exp. IV. Press out the juice of the grapes into a large-mouthed, short-necked bottle.

Expose to the air and a temperature of 70 to 75 deg. Fahr. till it ferments. Compare with original juice.

Exp. V. In a similar bottle, with $\frac{1}{2}$ cup of molasses and water, put a spoonful of yeast; cover and let it stand for a day till it ferments. (Strain.)

Observe odor, bubbles. Infer what the yeast has done to the liquid. Taste of liquid, compare with original mixture.

Compare the ingredients in the two bottles.

Infer what substances must be contained in the grape. Examine grape closely for the ferment found on each grape. (By ferment in this sense, is meant the dust found on each grape—seen though a microscope. They look like little specks without much shape or color.)

These little ferments quickly spoil good grape juice after it has been pressed out of the grape. They change the sugar in the grape juice into a gas and a poison. Refer to the crust of earthy matter seen on grape wine.

Refer to expts. 3 and 4; note bubbles and action of the ferment and yeast. Infer reason for the condition, and a reason for not adding yeast to grape juice.

Definition. A ferment is something that will rise or sour a liquid.

Definition. The process by which the juices of fruits or any sweet liquid are worked, changed, or soured is called fermentation.

Wines are formed by the fermentation of grape juice.

Beer is fermentation of molasses, or sugar of grains. (Malt liquid.)

Caution. Do not expose the liquid to a higher temperature than 75 deg. or the result will be vinegar.

A Queer Set.

What a funny language ours is. Do you know what a "set" is? If we refer to marbles it generally means seven; if chairs teacups, or spoons, we mean six. Well, let's see. A "set" in a ring doesn't mean six or seven, either, does it? What about a "set" of noisy girls? And then, when I talk of a sunset, I don't mean very many. The dictionary says, "set" means to seat, to place, to cause to sit, as, to set a parcel on the table. All right, when my father sets me to work, I suppose I must sit down. But I can't get him to think so always. The other day somebody set a house afire, and there was little sitting then. What do you mean when you "set-out" cabbage plants? Or, suppose you set a hen. My teacher used to tell me to set my examples down on paper. When spring "sets" in a boy "sets" a trap and catches a bird, "sets" the bird free, then "sets" out for home. Or suppose a man "sets" up in business, and "sets" the fashion of selling a "set" of tools at a "set" price. Who'll tell me what this little word "set" means?

—Selected.

No teacher can afford to be without such a paper as THE JOURNAL.

MARY A. SPEAR.

Supplementary.

A Meeting of Washington's Cabinet.

DIALOGUE FOR GRAMMAR GRADES.

(Characters:—George Washington, President of the U. S.; Thomas Jefferson, Secretary of State; Alexander Hamilton, Secretary of the Treasury; Edmund Randolph, Attorney General; Henry Knox, Secretary of War.)

The characters should be arranged around a large table covered with a dark cloth, and holding some papers, writing materials, etc. Washington occupies the seat of honor at the head of the table. Each character rises as he speaks, and all should bear themselves in a very dignified manner.

The characters should wear knee breeches, low shoes with buckles, swallow tailed coats, lace ruffles at the wrist and knee. The hair should be powdered; or, if possible wigs should be procured, and the hair tied back with a ribbon, thus making the old-fashioned queue, as seen in pictures.)

W. Gentlemen, as you are aware, the questions open to our consideration are many and serious. Our country is in debt, we are without credit, England is treating us with contempt, and France is urging us to help her. Truly, never in the darkest days of the Revolution, did we need stouter hearts and deeper wisdom. We will speak first to-day about our financial troubles. Mr. H. will you tell us what schemes you have thought of to help us out of our difficulties?

H. (Taking notes from his pocket.) Mr. President, I have noted down here several points to which I respectfully urge your immediate attention. It seems to me that if we are to take rank with the nations of the world, we cannot too soon assume the whole debt contracted in the war, redeeming the worthless continental money with good coin. This one step, Mr. President, will show the world that we feel the responsibilities of our position. Nay, I think it desirable to go even farther and I am afraid I shall meet with some opposition from my colleagues—I think the Federal government should assume the debts of the *separate states* contracted in the war and that —

J. (Interrupting.) Surely, Mr. Hamilton, you are going too far, and you, Mr. President, will not concur in any such measure. Such a step would be giving added power to the general government, and with our constitution we cannot be too careful to guard the powers of the states. Remember that we have but recently escaped from tyranny by a long and bloody war, and in what is our republic to differ from a monarchy if we constantly give the general government precedence over the state governments?

Knox.—And yet our state governments are poor and have many demands on them. I think Mr. H.'s proposition a good one not only on that account, but also for the reason that Mr. J. fears. It would bind the states to a closer union, and I think we stand in much more danger of falling to pieces from jealousy among the states than becoming a monarchy. In my opinion, the general government *cannot* be too strong. Our experience with the articles of confederation proved that a national government with less power than the states is utterly worthless.

W. Mr. H., we will listen further to your plans.

H. Mr. Knox has expressed my sentiments in regard to those already laid before you (consulting his notes). Another most necessary measure in my opinion is the establishment of a national bank. As you know, we have only state institutions and the organization of a bank of which the government is the chief owner, and from which it can borrow money, cannot fail to be of great advantage to us.

J. This is but another scheme to benefit the central government; for which, I grant you, the moneyed men will be grateful, but you should be more cautious in proposing such. This world is a suspicious one, and it might be imagined that some personal gain to be derived by Mr. H. makes him so earnest in advocating it.

H. (Starting from his seat.) Sir, such a motive could only be entertained by minds too petty to appreciate a higher one, and with their opinions I need not trouble myself.

W. This language is unseemly, gentlemen. (H. and J. beg pardon and resume their seats.)

H. (Again glancing at his notes.) I have thought of means of raising a revenue, although I am not yet prepared to enter fully upon the subject. It seems to me wise to have duties laid on imports and it may be even on some home manufactures, but I beg you will excuse me, Mr. President, from further speaking to-day and to pass on to other matters.

W. The next topic comes within your jurisdiction, Mr. Jefferson, you know the state of things between England and France. What is your advice on the subject?

J. It seems to me, Mr. President, that common gratitude should dictate our course. Where would we have been to-day if France had not assisted us with money and arms? In joining that country, we will not only be paying our just debt, but also punish England in some degree for her actions to us since the war. In what way has she shown us more respect as a nation than as her colonies? She still holds forts on our frontiers, incites the Indians to wars, and no American vessel on the high seas is safe from her hand.

R. I heartily agree with the policy proposed by Mr. J. The memory of Lafayette should inspire us to help him and his countrymen, now that they are in such need of assistance.

H. While at first thought Mr. J.'s proposal appears the right one, yet when we stop to consider the condition of our country, we cannot but be appalled at the idea of again plunging it into war. We are too feeble to be of much service to France; the only result of an alliance with that country will be fresh disasters to ourselves. If we wish to preserve our newly-born nationality we can not afford to be anything but neutral in the war now waging between France and England.

J. If Mr. H. would apply some of the caution he manifests in the adjustment of foreign affairs to his financial measures, I think all sides would be much better off. His course may be a safe one, but is it *generous*, is it *just*, is it *right*? Will a nation prosper that leaves its best friend in the hour of trial? And may I ask what Mr. H.'s views are in regard to England? Does he advise a continued submission to her injuries and insults?

H. Mr. J. has been a citizen of France so long that he may be pardoned for viewing the subject as a Frenchman rather than as an American.

In spite of his imputation of mean motives, in spite of his eloquence, I maintain that peace is the only course for the U. S. at present. I advocate the sending of a special minister to England to settle the troubles with that country. Should we not first be just to our own land, before we consider the claims of others, however strong? Who would be the chief sufferers from the war? Those very classes whom Mr. J. as a republican professes to labor for, and to whom he is afraid that I shall rob of their rights. (Jefferson starts to speak but W. rises.)

W. Gentlemen, we will close the meeting for to-day. It pains me that personal invective should enter into these questions of grave import to ourselves and our country. I trust that in our future discussions any such language will be avoided.

School Entertainments.

By E. J. New York City.

It often becomes necessary to have money for some purpose, such as a school library, or a piano. But the question arises, how shall it be obtained? One plan would be to give an entertainment, for admission to which a small sum might be charged. In addition to this, cake, candy, and ice-cream may be sold. The following suggestions may prove of value: 1. There should be an executive committee selected by the pupils from among their own number. 2. The committee, of which the teacher should be a member *ex officio*, should lay out a plan and report to the school. 3. The articles sold should be made by the pupils (in cities, ice-cream is best made by confectioners). 4. Officers should be appointed—door-keeper, treasurer, etc. When done, a report should be made to the school. As an aid to the children in making candy, the following recipes will be found valuable.

The following forms a foundation (fondant) upon which many kinds of candy may be made:

Fondant.—In a new marbleized sauce-pan, put two pounds of sugar, and two cups of boiling water with a speck of cream of tartar the size of half a pea. Stir it till it melts, and then let it alone, but watch it. Let it boil ten minutes after it begins, then test it. Lift up a drop gently upon the tip of a spoon, and drop it into a cup of ice water. If it dissolves, the sugar has not boiled enough. If it drops to the bottom of the cup, and forms a creamy ball that does not stick to your finger, it is just right. If it is hard, brittle candy it has boiled too long. A teaspoonful of water must be added, and it allowed to boil up again. If it is a sticky ball, it must boil a little longer. When it is just right, remove it from the fire and allow it to become so cool that you can bear your fingers in it. When thus cool, beat it with a spoon until it forms a paste which resembles lard. To use it, put into an earthen jar and set in a pan of boiling water to melt.

Cream Walnuts.—Take the walnut kernels one by one on the point of a needle; dip them in the melted fondant and lay on greased papers, which must be ready beforehand. Part may be colored pink by the addition of cochineal or raspberry juice, not more than three or four drops, as it will thin the syrup too much.

Cocoanut Balls.—Grate a large cocoanut and add to it the amount of fondant given. Take out about one-third of the mixture and form into balls. Divide the remainder into equal parts, and color one yellow with saffron, and the other red with cochineal. Little white ribbons may be put into the balls while soft, giving an ornamental appearance.

Tutti Frutti Ball.—Blanched almonds, candied cherries, citron, and raisins may be chopped together and stirred into a fondant and poured out on greased papers.

Marshmallows.—Dissolve half a pound of gum arabic in a pint of water; strain it, add half a pound of sugar, stir till the syrup is as thick as honey; then pour it gradually over the beaten whites of four eggs. Stir till the mixture does not stick to the finger. Dust a pan with starch, pour the marshmallow mixture into it, dredge it lightly with powdered starch, and when it is a little cool cut it in squares; when it is cold it is done.

Chocolate Creams.—Take the white of two eggs and an equal

quantity of water; to this add confectioners' sugar until it is hard enough to work, not too hard, however. Make it into small balls about the size of cherries. Melt half a pound of chocolate by scraping it, stirring a teaspoonful of warm water in it, and beating it until it is a thick paste. Dip the balls in the melted chocolate one by one, from the point of a needle.



Under the Umbrella.

By RUTH DAVENPORT.

I heard mamma say that her plant needed food
And that at the store they kept some that was good,
But she has just gone on a visit away,
And will not be able to get it to-day.

I thought that was funny! "A plant eat like me!"
I can't see any mouth, so how can that be?
So then mamma told me and made it so plain
I am sure I shall not forget it again.

I'll go ask Mr. Johnson what kind will do
'Tis raining hard but my umbrella is new,
And I'll carry the plant where no one goes near,
For if sister sees me, she *will* interfere.

And say "What *are* you doing? Put that right down!
Or I'll tell papa when he comes from the town.
I never *did* see *such* a mischievous elf!"
Of course *she* was never in mischief herself.

But *this* is not mischief, 'tis to help mamma,
For she will be tired after going so far,
And when she finds I had no one to advise,
And found the plant's mouth, won't she be *so* surprised?

Keep Trying.

Let three boys come up to speak this piece; the first boy speaks the first verse, and at the end the whole school may repeat or sing:

"If at first you don't succeed,
Then try, try again."

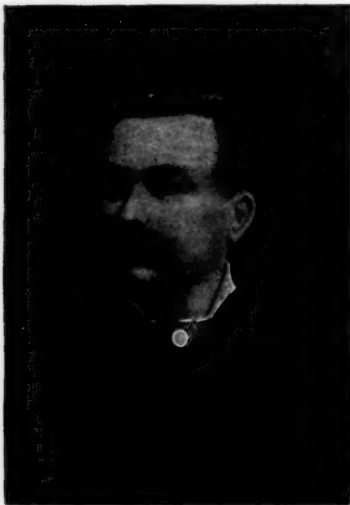
Then the second boy speaks the second verse.

If boys should get discouraged,
At lessons or at work,
And say, "There's no use trying,"
And all hard tasks should shirk,
And keep on shirking, shirking,
Till the boy became a man,
I wonder what the world would do
To carry out its plan?

The coward in the conflict
Gives up at first defeat;
If once repulsed, his courage
Lies shattered at his feet.
The brave heart wins the battle,
Because through thick and thin,
He'll not give up as conquered—
He fights, and fights to win.

So boys, don't get disheartened
Because at first you fail;
If you but keep on trying,
At last you will prevail;
Be stubborn against failure;
Try! Try! and try again;
The boys who keep on trying
Have made the world's best men.—Selected.

The Educational Field.



Gabriel Compayré.

Gabriel Compayré was born January 2, 1843, at Albi, the capital of the province of Tarn. His early education was received from his father, a man of sterling character and the author of *Historical Studies Concerning the Albigenes*.

He passed from his father's care to the college of Castres, then to the *lycée* of Toulouse, and finally to the *lycée Louis-le-Grand* at Paris. His brilliant, intellectual powers, vivid imagination, well-stored memory, and unwearied industry marked him as destined to signal service in the world of letters.

He entered the *École Normale Supérieure* in 1862. His tastes led him to philosophical study, yet his practical nature could not be satisfied with metaphysical subtleties. He became a warm advocate of experimental methods and of the Baconian philosophy. Upon his graduation from the normal school in 1865, he was at once made professor of philosophy at the *lycée* of Pau. In 1868, having been made a fellow of the university, he passed to the *lycée* of Poitiers. Here he manifested his sympathy for the common people by giving to workmen a course of lectures on moral subjects.

About this time he received honorable mention from the academy for an eloquent eulogy upon *Rousseau*, showing the influence of *Rousseau* upon the government and upon the schools. From this time to the present his life has been filled with labors and with honors.

In 1874 he presented his theme for the doctor's degree, *La Philosophie de David Hume*, which received a prize from the Academy. Transferred upon this from the *lycée* to the *faculté* de Toulouse, he took for the subject of his course of lectures modern subjects: *A Study of Darwinism*, *The Psychology of the Child*, *History of Education*, indicate the direction of his investigations. His most remarkable work, the *History of the Doctrine of Education in France since the Sixteenth Century*, published in 1879, reached its fourth edition in France in 1883, and has been translated into several languages. This work so signally displayed the great power and insight of its young author, that he was invited in 1881, by the Minister of Public Education, to assist in founding the *École Normale Supérieure des Institutrices de Fontenoy-aux-Roses*, and of *Saint-Cloud*. In the same year he arranged for these schools a most successful course of study and organized a school at Sevrès in which pupils might be prepared to enter the normal schools.

At *Saint-Cloud* he was chosen to teach the history of pedagogy; this course of instruction he condensed, and published in one volume under the same title in 1885. He has given one after another a *Cours de Pédagogie*, 1886; *Cours de Psychologie*, 1887; *Cours de Morale*, 1888.

But the notoriety of M. Compayré is, above all, due to his *Manual of Civil and Moral Lectures*. In less than three years, more than five hundred thousand copies had been sold. This little book was the object of violent attacks, its liberality of thought involving the author in a long and bitter controversy. It was placed in the catalogue of prescribed books, which contributed not a little to its popularity elsewhere, and was followed by the publication of *Lectures Civiques et Morales*, and *Cours d'Instruction Civique*, to be used in normal schools.

He translated with great care adding valuable matter of his own: *Bain's Inductive and Deductive Logic*; *Huxley's Hume*,

His Life and Philosophy; and *Locke's Thoughts on Education*. His popularity had continually increased and he was appointed Chevalier of the Legion of Honor, in 1880. His power in the party of the republic resulted in his entering political life in 1881, having been elected deputy from the arrondissement of Savaur in his native province. From this time he took a distinguished part in the work of the Chamber of Deputies, especially in the department of education, as a member of the committee of the budget, and of the Concordat.

He was re-elected in 1885, but not in 1889. In 1890 he was made *recteur* or head of the *Académie de Poitiers*.

M. Compayré combines in a remarkable degree the qualities of the scholar and the man of affairs. In personal appearance he is most impressive, the eye bright and piercing, the forehead very broad and very high, and the whole face bearing the marks of unconquerable perseverance, nobleness, and generosity.

The first annual catalogue of the state normal school of Colorado is full of valuable information. The school was established in 1889. 96 students were in attendance the first year, at an average age of twenty-three years. There are at present 157 students.

The key-note of the school, under Dr. Z. X. Snyder as president, is briefly summed up as follows: "The function of the normal school is to make *teachers*. To do this there must be a continual growth in *scholarship, power, culture, and influence*. . . . "That phase of training, with which the professional department has to deal is *power to teach*." . . . "There are three immediate agencies involved in education: *the teacher, the child, and nature*."

The course of study is planned in logical order from an analysis of the child as a central agency in education, and embraces the most progressive means to the end of its complete all-round training. There is the flavor of originality and breadth in the make-up of the school curriculum that one would expect from its president who has long ago demonstrated his power to think for himself. This new normal school will be a center of interest in the future.

Its carefully selected faculty and opportunity to carry out plans unhampered by tradition or a political board will furnish a field in which to work out an ideal normal school.

The Pacific Coast Teacher, a new monthly magazine, comes into the field devoted to the educational interests of the Pacific coast. It is in book form and contains about forty pages of reading matter and is edited by John G. Jury and Franklin K. Bethel. No. 4, upon the desk, is an interesting number. Success to every efficient help for educational workers.

Christopher Pearse Cranch, the poet, painter, and musician died at Cambridge, Mass., on the 20th of January. Mr. Cranch was of New England ancestry and was in close relations with Ralph Waldo Emerson and the leading thought of his contemporaries more than fifty years ago. His poems are familiar to many who do not know the author's name.

A new circular of information of the Leland Stanford, Junior, university gives a detailed account of the institution for the benefit of inquiring students. It contains a completed course of instruction with a catalogue of students. No degree will be granted to any person who has not spent at least one year at the university; no honorary degrees will be given. Tuition in all departments of the university is free. Board in the "Halls" is furnished at cost, at present fixed at \$20 per month. The expenses of the student exclusive of clothing and railway fares need not exceed \$200 a year.

It is curious that Mr. Thornton's attempt to prove the practice department of the Cook County normal school to be a poor school has instead of emptying its seats filled them up; or rather the citizens have not believed him. The school is really larger than ever before—the usual number has been 300; now it is 362. Seventy of these come from outside of the district, getting special permit to do so. Would they do this if it was behind the other schools as Mr. Thornton declared? Hardly.

The Normal school is over crowded; nineteen states, Iceland, Norway, and Canada are represented in the class by graduates this summer.

In THE JOURNAL issue of January 23, an error in type made us announce the *Southern Educator* as a "new claimant for teachers' patronage." We are happy in making this correction to award to that paper the full credit of having long ago successfully passed the stage of a "new claimant." For many years the *Southern Educator* has been among the foremost in floating the educational banner, with progress inscribed upon its folds. Long may it wave. Our welcome was designed for the *Southern Education* about to appear in Alabama.

A number of citizens of Salem, Mass., interested in a broader development of art education among the pupils of the public schools, propose to introduce into the school-houses of that city, casts, pictures, etc. A room in one of the buildings (Phillips school)

has been arranged in accordance with this idea. The walls are tinted, and decorated with portraits of Washington, Lincoln, Coliseum of Rome, fine paintings from Venice, and photographs of the best art. There is also a growing palm upon a pedestal and other accessories to cultivate the taste of children.

All honor to the good old city of Salem for inaugurating this movement.

The following is the program of the meeting of the Department of Superintendence (N. E. A.) to be held at Brooklyn, February 16, 17, 18:

Tuesday.—"The Rural School Problem," by Henry Raab, Illinois. Discussion by E. C. Hewett, Illinois; John MacDonald, Kansas; Andrew S. Draper, New York; L. R. Klemm, Washington, D. C.; L. E. Wolfe, Missouri; C. C. Rounds, New Hampshire; O. E. Wells, Wisconsin; J. A. Shawan, Ohio. "Education at the Columbian Exposition," by Selim H. Peabody.

"The World's Educational Congress," W. T. Harris, U. S. Commissioner of Education.

"In Memoriam, John Hancock," by W. E. Sheldon, Massachusetts; D. L. Kiehle, Minnesota; L. W. Day, Ohio.

"History and Literature in Grammar Grades," by J. H. Phillips, Alabama.

"Shortening and Enriching the Grammar School Course," by Charles W. Eliot, Massachusetts. Discussion by Edward Brooks, Pennsylvania; S. T. Dutton, Massachusetts; H. L. Stetson, Iowa; John T. Prince, Massachusetts; Eugene Bouton, Connecticut; A. P. Marble, Massachusetts.

Wednesday.—"What is the Duty of the State towards Children of Kindergarten age?" by Frank A. Fitzpatrick, Nebraska. Discussion by Aaron Gove, Colorado; F. B. Cooper, Iowa; Miss Elizabeth Harrison, Illinois; E. N. Jones, New York; Thomas B. Stockwell, Rhode Island; C. B. Gilbert, Minnesota.

"What can be done to bring Children on further in their Studies before they leave School to go to work?" by Charles W. Hill, Massachusetts. Discussion by N. C. Dougherty, Illinois; George J. Luckey, Pennsylvania; Henry A. Wise, Maryland; E. O. Vaile, Illinois; Jerome Allen, New York; C. P. Rogers, Iowa; Josiah H. Shinn, Arkansas; J. H. Blodgett, Washington, D. C.

"The Influence of Manual Training upon Habits of Thought," by John E. Bradley, Minnesota.

"Is there a place for Manual Training between the Kindergarten and the High School?" by W. B. Powell, Washington, D. C. Discussion by Edwin P. Seaver, Massachusetts; J. M. Greenwood, Missouri; W. N. Hailmann, Indiana; Geo. P. Brown, Illinois; W. E. Sheldon, Massachusetts.

Thursday.—"The Health of School Children as Affected by School Buildings," by G. Stanley Hall, Massachusetts. Discussion by James L. Hughes, Canada; C. D. Hine, Connecticut; L. O. Foose, Pennsylvania; L. W. Day, Ohio.

"The Relations of the Public Library to Schools and Workingmen," by W. H. Brett, Ohio. Discussion by N. B. Coy, Colorado; W. A. Mowry, Massachusetts; D. L. Kiehle, Minnesota; A. E. Winship, Massachusetts.

Exercises in Commemoration of the 300th Anniversary of the Birth of John Amos Comenius, 1592-1892: 1. The Personal Characteristics and Private Life of Comenius, by Rev. Dr. J. Mortimer Levering, Pennsylvania; 2. The Text-Books of Comenius (illustrated by stereopticon views), by Wm. H. Maxwell, New York; 3. The Place of Comenius in the History of Education, by Nicholas Murray Butler, New York.

The kindergartners of Brooklyn have formed an association. Its object is to promote a mutual interest in kindergarten work in Brooklyn, and monthly meetings will be held on the first Tuesday of each month at the Fröbel academy, Tompkins square, Brooklyn, where kindergarten subjects will be discussed and typical lessons will be given in elementary science, teaching, color work, drawing, modeling, physical culture, songs, games, gifts, and occupations.

The Washington's birthday exercise for primary grades in our last issue should have been credited to Anna A. L. Lee, Trenton, N. J.

New York City.

Miss Caroline T. Haven, of the Workingmen's school, began a course of ten lessons in primary manual work at 109 West 54th street, on Saturday, January 30, at eleven o'clock. These lessons are based on kindergarten principles and are the outgrowth of years of experience in this line of work. They will include paper folding, paper cutting, parquetry, pease work, cardboard modeling, and clay work, and are specially adapted for use in primary schools. Terms:—Five dollars for the course, including all material.

The New York Branch of the American Society for Psychical Research has secured Prof. James, of Harvard university, to read a paper entitled "A Census of Hallucinations" on February 10, at Columbia college; also Dr. Richard Hodgson, secretary of the American society will read a paper on "Automatic Writing" the same evening.

There is a series of free concerts proposed for poor children on Saturday afternoons at Madison Square Garden. At the Young People's concerts at Carnegie Music Hall, the entire upper gallery, seating a thousand, has been thrown open free to poor children.

A large circle of friends of the kindergarten celebrated Prof. John Kraus' birthday February 2, at 205 West Boulevard New York, where Mrs. Kraus has an admirable class preparing to spread the discoveries of Fröbel. Mrs. Kraus (when Miss Boelte) had a most interesting career; she undertook the study of the new plans for directing child growth at a time when it was most unpopular, becoming a pupil of Madame Fröbel, entering the institute when it was full of the spirit of Fröbel, and when his best assistants were alive. She puts her work on the solid basis of known laws of mental development of the child.

Across the Continent and Back.

The New York delegates to the International League of Press Clubs to be held in San Francisco, California, left New York January 6, and returned January 31. They were the guests of the New York Central Railroad the entire distance. The train consisted of six vestibuled cars. There was a dining and a smoking car, a car for the gentlemen, and two cars fitted up in staterooms for the ladies; the dining room was changed evenings into a concert room and entertainments were given, so that it became a veritable "mansion on wheels."

The same cars went the entire round, Chicago, Denver, Salt Lake City, San Francisco, Los Angeles, San Diego, Santa Fé, Kansas City, St. Louis, Toledo, Detroit, Niagara Falls, without change, so that the delegates and their friends occupied the same section or state room for twenty-six days and traveled over 8,000 miles; in other words, the train was their home.

This train was the finest that ever crossed the continent; no accident of any kind occurred, nor was there any sickness. Fearing there might be, a physician accompanied the party. This train had the right of way on every road.

The whole affair was under the superintendence of W. B. Jerome, the general Western passenger agent of the New York Central, assisted by J. C. Yager, Eastern superintendent of the Wagner Palace Car Company. These two gentlemen strove to make the journey delightful in every way, and succeeded.

Mr. Jerome began his connection with railroads when 17 years of age; after a long and varied experience in this field of work he became ticket agent, at Grand Rapids, for the Michigan Central and Chicago and West Michigan railways, where he remained for three years, and then became the passenger agent for the Michigan Central for the state of Michigan. Then (1880) he had charge of the passenger business of five states for the A. T. and S. F. Railway. Next (1883) he was appointed to his present position which is representing the New York Central and H. R. R., west of Detroit river; the Michigan Central, Lake Shore and Big Four west of Salt Lake.

Mr. Yager was connected with the Pullman Company as district superintendent, beginning as conductor. This he resigned to work for the Wagner Palace Car Company, of which he is the Eastern superintendent, having charge of all lines east of Buffalo, with headquarters at New York.

Another genial New York Central man who took a lively interest in this excursion, and who left no stone unturned to secure for the delegates the unprecedented service that they enjoyed, was Mr. H. C. Roach, general Eastern passenger agent of the New York Central. He accompanied the party as far as Chicago, and seeing them well started regretfully left the party; but delighted them by entering the returning train at Toledo.

Those who look deeper into the management will find a head to plan out the work which these gentlemen performed so successfully and courteously; that head rests on the shoulders of Mr. George H. Daniels, the general passenger agent. The one who seeks for the source of the great excellence of the management of the passenger department of the New York Central will find it in his office.

It is estimated that the cost to the Wagner Palace Car company for furnishing the entire train during the trip was over \$10,000. At \$30 per day the rental for such a trip would cost \$5,625. The train was equipped with 1,000 sheets, 1,000 slips, 2,500 hand towels, 50 glass towels, 500 table cloths, 1,500 napkins and 650 doilies. The expense of the washing for the trip was over \$400. Everything was as bright and clean and as fresh on the return to New York as at the departure.

On arriving at St. Louis the delegates felt that something must be done to show their appreciation of the management; so they presented an elegant silver punch bowl to both Mr. Jerome and Mr. Yager, and rings and pins to various employees. Messrs. Keenan, Boyle, and Charlouis, made the presentations in fitting speeches; the scene within while the cars were speeding along towards Toledo is described as most delightful and affecting. A beautiful silver dessert set was presented to Mr. Roach when he boarded the train.

Mr. Charlouis, at this meeting of Press Clubs, represented THE SCHOOL JOURNAL. As to this remarkable journey (for it must be noted that crossing the continent twice without changing cars is a new experiment), he declares that everything was managed so well that it is proper to use the term perfect. There were no delays, not even a "hot box" to trouble the party.

The New York Central has thus shown its complete comprehension of the traveling problem in America and its ability to carry its passengers with safety. This matter of safety on the railroads is not enough appreciated (the editor has just returned from a trip to and from and in Florida of 2500 miles without an accident); we do not realize the vast number of people that are moving eastward, westward, northward, and southward every moment of the day; who step into trains with as much confidence as they would enter houses, showing a trust that is born of actual trial.

Correspondence.

My Plan for Rewarding.

I have at present one of the best incentives in my primary school for interesting the pupils that I have ever had.

This method is all I require for good behavior and for perfect lessons. I am quite surprised at my success in that line, and attribute it in a great measure to the little plan. For competition among the children I have found no inducement better. I adopted it some time ago, and they are quite as interested now as they were at the beginning.

So much in its praise; and now for the plan.

Each child's register number is placed upon the blackboard on Monday. For every scholar who takes part satisfactorily in the opening exercises I give a perfect mark; for every perfect recitation a perfect mark; and so continue throughout the day. They invariably do their best, which is all I require—no matter how crude it may be for the beginners. I place a little dot on one corner of their slates, for the "perfects" I give them, and we call them soldiers, which pleases them.

After the children are dismissed I copy the soldiers from my slate upon the blackboard, for I call off their numbers before dismissing for the day. I put the soldiers upon the board in colored crayon, a different color for each day; they are in a "new uniform," we say. The first thing they do on entering the school-room the next morning, is to aim for the blackboard to see how many soldiers they have.

If a child is very disorderly, which seldom occurs, I erase one of his or her soldiers from the blackboard and we say, "He is shot." The average age of pupils in my school is six years. As a reward, the child who has the greatest number of soldiers at the end of the week, is to be captain of his class for the following week; leads the march, passes pencils, recites first, and passes out first when dismissed.

This is all the reward I give for good scholarship, and it seems to be satisfactory.

I have had pupils ten or twelve years old, as eager as the younger ones, for the soldiers. The child who has the greatest number is chief captain.

S. J. BOYCE.

Fishkill-on-the-Hudson.

Editors of THE SCHOOL JOURNAL: I am reported in your issue of the 16th. inst. as saying in my address before the Florida State Teachers' Association: "Given scholarship and the methods will take care of themselves." That was not what I did say. On the other hand, I said in one place: "The method, to be sure, is valuable and to impress its importance special attention should be given to it." In another paragraph I said: "I understand the value of methods and I believe I fully appreciate how much they have done for the cause of education." I believe, as Mr. A. M. Kellogg stated it, in "scholarship and methods," as the following sentence with which I closed my address will show. I said: "We want higher scholarship and we want better methods, but we do not want a teacher who has only one or the other."

De Funiak Springs, State Normal School. H. N. FELKEL.

In Manitoba the aurora borealis is of such brightness on the long, clear, moonlight nights in winter that my curiosity has been aroused as to the latest theory of their cause. Can you enlighten me on this subject?

L. E.

Manitoba.

The cause or causes of the aurora borealis and the aurora australis are not with certainty known. There is much evidence to show that the aurora is similar in nature to the pale blue, luminous discharge that is noticed when a high, potential, electric machine is put in motion in a dark room. Ghostly "flames"—I use this word for want of a better one—escape from every pointed part of the machine, with a feeble, hissing sound. It is commonly called "the brush discharge." An experimenter in Europe, by means of a net-work of pointed wires which he distributed about the surface of a certain mountain peak, produced an artificial aurora by means of a high, potential current. An exhaustive paper on the aurora appeared about ten years ago in the *Scientific American*. It is well worth studying.

J. W. REDWAY.

1. Why, in summer, does the sun at rising and at setting shine on the north side of certain houses?

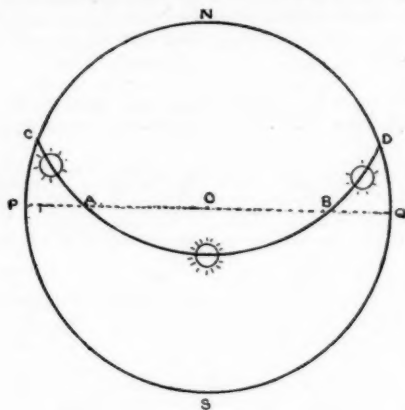
2. Why does the sun "cross the line" in some years on March 21, and in others on March 22?

3. What year was only nine months and six days long?

C. L.

1. This statement is subject to considerable modification with respect to date and to latitude. In all places within the torrid zone the direction of the sun's rising and setting is very nearly east and west. As the observer goes north this is not the case.

In the latitude of New York, or of Quebec, the direction of the sun's rising is north of east in summer and south of east in winter. In the accompanying diagram, which is made very freely



unconventional for the sake of simplicity, NPQS is the horizon of an observer at O, PQ is, we will say, a high fence built east and west under the observer's zenith, and DBAC is the path of the sun. Now while the sun is apparently moving from D to B, the light falls on the north side of PQ; from B to A, on the south side; and from A to C, on the north side.

2. We must take into consideration that the astronomical year does not begin January 1, at 12 midnight (more accurately mid-day), but, roughly speaking, six, twelve, eighteen, or twenty-four hours afterward, accordingly as it is the first, second, third, or fourth year after leap year.—the year being about 365 d., 6 h. in length. Now the length of time required for the earth to pass from its perihelion to the vernal equinox is nearly uniform, but inasmuch as the beginning of the calendar year varies from six to twenty-four hours from the astronomical year, the date of the vernal equinox may fall on March 21 or March 22.

3. I am unable to find a record of any year only nine months and six days in length. It may have occurred at the time when Numa Pompilius, second king of Rome, added two months, January and February, to the calendar. In 1582, Pope Gregory set the calendar ahead ten days, and in 1752 the change was adopted in England, making that calendar year 336 instead of 366 days in length.

J. W. REDWAY.

Do you think that seven hours' sleep is sufficient for a teacher, if the rest of her time outside school hours is devoted to study?

Montana.

A. G.

The number of hours necessary for sleep is an individual matter; but, as a generalization, it is safe to say that a teacher will not get too much sleep if she takes all she can get.

Another experiment with the newspaper—and yet not an experiment. I had seen it tried in another school, and when I moved from a country village school to one in a larger place, where daily papers abounded, I did the same. No subjects were assigned to any one scholar. A little time each morning immediately following the devotional exercises was devoted to a short talk on the news of the day (and yesterday). The pupils were encouraged to read intelligently the leading journals in order to inform themselves on the events that were occurring in different parts of the world. They were not made to feel that this exercise was a task or a lesson, but a pleasant recreation—a pleasure.

This is not the only way in which the newspaper can be used. Different circumstances will suggest different methods. Many are the ways in which papers can be intelligently used in the school-room. They should be used more than they are. In country districts where newspapers are scarce, educational journals with news columns, like those of THE SCHOOL JOURNAL, should be provided by the teacher. If the scholars will not read them out of school hours they should do it in school hours as a reading lesson, followed by comments as each item is read.

The increased attention paid to newspapers and news, by teachers, as an educational force, is encouraging, but more should be done. No boy or girl should be considered fit to leave school until able to use intelligently the ordinary news journal, as well as the spelling book and the rule of three.

Ala.

S.

1. What is the population of the United States? 2. Is the Eiffel tower standing, and what is its height?

E.

Me.

1. 62,480,550. 2. The tower is still standing and is nearly 1000 feet high.

Have you ever tried Hood's Sarsaparilla. It is a very successful blood purifier and tonic.

Important Events, &c.

Selected from OUR TIMES, published by E. L. Kellogg & Co.; price, 30c. a year.

Christian IX., King of Denmark.

Christian IX. is the son of Duke Friedrich Wilhelm of Schleswig-Holstein, and was born in 1818. During his youth and early manhood the Schleswig-Holstein question began to be prominent. Prussian influences in Schleswig, which had virtually been a part of the Danish kingdom for centuries and had been separated from Holstein by a wall and a ditch, greatly increased. In 1846 King Christian VIII. of Denmark sought to extend the law of succession of Denmark proper to these duchies, and in this way to secure the union of the Danish monarchy. When Frederick VII. ascended the Danish throne in 1848 a rebellion broke out in Schleswig and Holstein, which was supported by both Germany and Prussia. The rebellion was put down in 1850, and then the great powers declared the indivisibility of Denmark.

In 1851 Christian was made heir to the throne by virtue of a London decree conferring the right of succession, after the extinction of the house of Oldenburg, to the house of Glücksburg. In the meantime Denmark had adopted a constitution that gave civil liberty and universal suffrage. It found no favor with the German residents of Holstein, and the king restored absolute monarchy for Holstein and Lauenburg. In 1863, the year that Christian became king, a new fundamental law was declared for Denmark and Schleswig. This appropriation of the duchy by Denmark did not please Prussia, and that power, assisted by Austria, made war on the Danes. By the peace of Vienna in 1864 Schleswig and Holstein were separated from the Danish possessions. Prussia got them both and although the treaty called for the restoration of the northern part of Schleswig, inhabited by Danes, to the Danish crown, no heed was ever paid to this part of the agreement.



In spite of this political disaster, which greatly reduced Denmark's influence as a power in Europe, Christian has been very successful in contracting family alliances; in fact, he has been humorously called "the most successful father-in-law in Europe." His daughter, the Princess Alexandra, was married to the Prince of Wales in 1863, and another daughter, Princess Marie Sophie, became the wife of Emperor Alexander III. of Russia in 1866. His son George was made king of Greece in 1863.

Indeed King Christian's family life, allied as he is to these powerful houses, ought to be a very pleasant one. Few pictures of royal family enjoyment are more pleasing than that of Alexander, "czar of all the Russias," and Christian's son-in-law, romping with the English, Russian, and Greek princes and princesses at the palaces in Copenhagen and St. Petersburg. The most amusing part of the performance was to see the czar stand up and challenge these scions of royalty to throw him down, in which, it may be said, they never once succeeded.

Since the loss of the territory as the result of the war of 1863, the kingdom of Denmark has consisted of the peninsula of Jutland and the outlying islands. Copenhagen, the capital, is situated on the island of Seeland, which is about the size of the state of Delaware. The coast is low and the water shallow, and there are numberless small islands, sandbanks, and bars that interfere considerably with navigation. Iceland, Greenland, and the Faroe islands, and Santa Cruz, St. John, and St. Thomas, in the West Indies, are Danish colonies. Denmark proper has an area of 14,533 square miles and a population of about 2,000,000.

THE INTERCONTINENTAL RAILWAY.

A full report has been made by a commission relative to an intercontinental railway. According to this the central point of distribution in this country will be St. Louis, which will vastly increase the importance of that city. Already the railroad communication between this country and all parts of Mexico is established. The route is therefore taken up at Ayutla on the Guatemalan frontier; thence it will continue close to the Pacific ocean till it reaches Colon; thence it will touch Quito and Cuzco, skirting Lake Titicaca in order to enter Bolivia. The line will connect the towns of La Paz, Oruro, and Huanchaca and here it will divide into several branches, going to Chile, the Argentine Republic, Brazil, Paraguay, and Uruguay. One line will cross from Sucre to Rio Janeiro and another will extend from Sucre to Buenos Ayres.

SIBERIA'S FUR TRADE.—A system of annual fairs or exchanges has long been in vogue. The principal ones were held at Ostrownoje, the easternmost and remotest trading post of the Old World; Ochotsk, on the sea of that name; Yakoutsck, on the Lena river; Irkutsk, on Lake Baikal; Kiachta, at the central gateway of the Celestial empire; Irbit; Tobolsk; and Nishne-Novgorod; whence the bales of fur and the miscellaneous products of the Arctic seas find their way eventually through regular channels, to St. Petersburg, Moscow, and Peking, and at last to markets far beyond.

There is also considerable trade to the Amoor which, being ceded to the Russians in 1858, was again occupied by them after an interval of almost two hundred years.

THE YELLOWSTONE PARK.—In accordance with an act passed by Congress the president has issued a proclamation selling aside tracts of country adjoining the park on the south and east as a public reservation where the cutting of timber and settlement are forbidden. It is believed that the present congress will include this tract in the park. Secretary Noble has done much to exclude the sheep-raisers and lumbermen from the land already set aside, and what is wanted now is men of skill and taste to preserve and enhance its beauties.

GUNS FOR COAST DEFENSE.—The Watervliet gun factory at West Troy, N. Y., is now equipped for the manufacture of guns up to and including twelve inches. Additional machinery will be put in for the making of sixteen-inch guns if found necessary. Contracts have been entered into for seventy-three sea-coast mortars.

THE NILE'S SOURCE.—There is much interest among geographers in the visit of Emin Pasha to a river in Central Africa that is said never before to have been seen by white men, and which is claimed to be the true source of the Nile. The reports say the natives call this river the Kifu, and that it rises somewhere northeast of Ujiji, flows over two hundred miles, and empties from the south into Lake Albert Edward. This would make the main course of the Upper Nile to be the Kifu, Lake Albert Edward, the Semlikie river, and so to Albert lake.

LIGHTING MOUNT WASHINGTON.—The largest electric search light ever made will soon be placed on top of Mount Washington. It will also be the highest artificial light in the world. People at Portland will be able to see it and under proper conditions it will probably be visible at Boston.

TORPEDO BOATS ON THE PACIFIC.—The Chilean war scare made prominent the fact that there are no torpedo boats on the Pacific. The bureau of ordinance will recommend that several such vessels be built on that coast.

THE GERMAN EMPIRE OF AGE.—On January 31, it was twenty-one years since the adoption of the constitution of the German empire by the Bavarian council. The event was appropriately celebrated. William, king of Prussia, was crowned emperor of Germany, January 18, 1871. Before the twenty-seven separate states united in one empire, the territory designated "Germany" consisted of two political combinations known as the North German and the South German confederations. One of the results of the war with France in 1870 was the annexation to Germany of the rich provinces of Alsace and Lorraine. They were made imperial domain by proclamation, June 9, 1871.

The German empire of 1892 consists of twenty-six states and has a population of 48,000,000, exclusive of colonies. It has an area, exclusive of colonies, of 311,170 square miles. Few constitutional governments in the world are more compact. A century ago what was known as "Germany," or, more properly and formally, "the Holy Roman Empire," was composed of nearly 800 states, most of them with feudal governments that were the butt of ridicule in all countries in Europe.

New Books.

The Industrial Primary Arithmetic, by James Baldwin, Ph. D., illustrates the natural method of teaching numbers. The pupil has the matter presented in such a way that he is led to make discoveries himself. The course presented is intended to lead up to the science of arithmetic, as the pupil is too young to understand science, but it gives him an insight into practical work in arithmetic that will enable him to solve about all the problems he will meet with in every-day life. When he comes to the science also he will be enabled to master it much more readily than if he had not had this preliminary training. The work embraced in this book extends through the first three years of school life. The arrangement of the matter will be appreciated. The instruction to be imparted by the teacher is indicated in the left-hand column of each page, while the "seat work" of the pupil is given in the other column. This seat work is of a novel and interesting character, including stick-laying, measuring, copying, drawing, etc., for the youngest pupils; writing, drawing geometrical figures, etc., for those more advanced, and a series of harder exercises for the older pupils. The book is divided into five parts that are intended to meet the wants of the pupil during different stages of his mental development. Instead of theory the teacher is given something practical, and it will not take the experienced teacher long to decide how to apply it to the particular needs of his school. (Ginn & Co., Boston. 55 cents.)

One of the most attractive volumes in the Students' series of English classics is Johnson's *Rasselas*, edited with an introduction on methods of study by Prof. Fred. N. Scott, of the university of Michigan. It is the belief of Prof. Scott that the matter of annotating has been overdone, and that it is better not to overwhelm the young student with a mass of such material. The notes in this edition have therefore been confined to a short list of words that are used in a peculiar way by Johnson, or that have changed in meaning since his time, and to such other matters that absolutely required an explanation. The biography of Johnson is short and admirably written. It is such as will give the reader a good idea of his striking personality as well as his heroic struggles against poverty. The story with its poetic fancies and philosophical reflections needs no comment. The one who peruses it will reap both delight and profit. (Leach, Shewell & Sanborn, New York.)

Last year Ohio lost a man whose life had been devoted solely to the cause of education, of whose noble qualities hundreds have since given testimony. A memoir, with selections from his writings, by W. H. Venable, LL. D., has lately been issued under the title of *John Hancock, Educator*, and surely he well earned that honorable appellation. Like many others of our noted men Dr. Hancock's origin was humble. He went from the log-cabin home to the master's desk, and by native ability, steady and well-directed effort, and a sincere desire to benefit humanity arose to a place of commanding influence. Thousands have been encouraged to fresh endeavors by his writings in educational journals and his voice at institutes and other educational gatherings. The task of setting forth such a life and such a work was entrusted to able hands. The story of his career is followed by an estimate of his character and services, and to this are added many well-selected extracts from his writings. The personal admirers of Dr. Hancock will hail the volume with pleasure and all teachers may draw inspiration from its pages. The future educational historian will also draw from it valuable material. (C. B. Ruggles & Co., Cincinnati. \$1.25.)

Given—a boy, a new knife, and a school desk, and unless there is some other object at hand on which to try the implement we shall have some carvings on the desk which will not stand criticism based on the laws of art. The country boy has too much manual training; the city boy has not enough. Since the tendency of the average boy is to carve something, and since the proportion of boys in cities is constantly growing larger, educators have done well to provide manual work for the pupils. One of the most successful manual training teachers is George B. Kilbon, principal of the manual training school, Springfield, Mass. His book on *Knife Work* meets a widely felt want for a clear, accurate, well-illustrated manual on this important subject. The course provided in the book extends over four years as follows: Fifth grade—surface forms, cut from thin wood; sixth grade—surface forms, cut from thick wood; seventh grade—geometric solid forms; and eighth grade—mechanical and natural forms. The only tools used are the knife, $\frac{1}{4}$ inch chisel, gauge, try-square, dividers, rule, and pencil. The object is not primarily to teach trades or to make things; but to train to accuracy in the use of tools—to make the pupil familiar with operations that underlie many trades. While getting his manual skill he is trained to think. Mr. Kilbon takes up each tool mentioned and gives directions as to its use, follows this up with studies of the circle, triangle, octagon, and other geometrical figures, and then applies

what has been learned to the construction of crescents, stars, arrows, letters, etc. The author is so explicit in his directions, and so orderly in the arrangement of the work, that one could by its aid carry forward the work successfully. (Milton Bradley Co. Springfield, Mass.)

Primary teachers will be glad to learn that a manual of manual training exercises by G. Bamberger, formerly principal of the Workingmen's school, New York, and now superintendent of the Jewish training school, Chicago, has been issued. The book contains six manuals on (1) paper folding, (2) paper folding (geometrical forms), (3) paper cutting and mounting, (4) clay cutting or clay carving, and (5 and 6) cardboard work. Each part begins with simple forms and works up by gradual steps to complex ones, each step being illustrated so clearly by means of drawings that the teacher cannot fail to understand it. There is a wide recognition of the value of such work, and teachers will appreciate the value of a book by one who has had so much experience in teaching as the author. By means of this manual the teacher of judgment could conduct a class successfully through these elementary exercises, giving them an accuracy of eye, an appreciation of artistic forms, and a skill of hand that would aid them greatly in their future career. (A. Flanagan, Chicago.)

A most fascinating book for readers of all ages and conditions, and especially those addicted to travel, is *The Story of the Hills*, by Rev. H. N. Hutchinson, F. G. S. It tells what is positively known about the rock ribs of the earth, including the poetic and scientific, avoiding those points concerning which there is disagreement among the scientists. In the first part mountains are described as they are, and in the second part we are told how they were made. The chapters relating to the uses of mountains, sunshine and storm on the mountains, mountain plants and animals, how mountains were upheaved, volcanic mountains, volcanic architecture, etc., will be found of intense interest. The book is well illustrated, some of the illustrations being from photographs taken in the High Alps, giving views of such grand peaks as the Matterhorn, Mount Blanc, and others. (Macmillan & Co., New York and London. \$1.50.)

The sixth number of Downs' memory and thought series treats of *Memory Training of the Young*. In addition to the "Preliminary Reflections," by E. W. Hassler and Ermentine Young, there are articles on "Lessons on Observation," "The Constructive and Imitative Faculties," "Arithmetical Study," "An Ethical Memory," etc. The value of this number will be appreciated by memory students. (James P. Downs, Harrisburg, Pa., and 243 Broadway, New York.)

All branches of education as the years pass by are made to conform more and more to the maxim, "We learn to do by doing." For instance, the student in geometry was formerly required to memorize some one's demonstration. If he could read this off glibly to the professor this sufficed. But thinking teachers say that only a small part of the mental discipline possible in the study was obtained in this way. The *Manual of Plane Geometry*, by G. Irving Hopkins, instructor in the Manchester (N. H.) high school is intended to make the student think, to exercise his ingenuity. Demonstrations are only given when the average pupil would be at a loss to know how to proceed, and generally, as illustrative of methods, while others are partially given and left for the pupil to complete. In more cases suggestions are introduced of which the student may or may not avail himself. This plan of teaching geometry has been tried for three years by the author in his classes and has worked so well that many others will probably adopt it. (D. C. Heath & Co., Boston. 75 cents.)

A descriptive poem that can hold its own for more than a century and a half must have remarkable merit. Such is Thomson's *Seasons*, which with the *Castle of Indolence*, is published in the Clarendon Press series edited with biographical notice, introduction, notes, and a glossary, by J. Logie Robertson, M. A. The *Seasons* especially are so full of grand and beautiful passages that they cannot fail to secure the admiration of all true lovers of poetry. The book is neatly bound and well printed. (At the Clarendon Press: Oxford. Macmillan & Co., New York. \$1.10.)

A collection of essays entitled *Geological Sketches*, by Archibald Geikie, LL.D., has been published in an octavo volume of 332 pages. It embodies descriptions of the author's rambles in Europe and America. The style is attractive, and the subjects such as will interest the general reader as well as the geologist. (Macmillan & Co., New York.)

All Chautauquans should read Habberton's novel entitled *The Chautauquans*. It is a picture of a typical American village and an encyclopedia of information about getting up a Chautauqua circle. (Rob. Bonner's Sons, New York.)

A. O. Prickard, M. A., of Oxford, is the author of an octavo volume of 114 pages on *Aristotle on the Art of Poetry*. It

gives a general treatment of Aristotle's thoughts on that subject and indicates some among them that are of lasting value and application. In the appendices are included references to passages from Greek and Latin authors, notes on special points, and a list of the principal editions of and commentaries upon the *Poetics*. (Macmillan & Co., London and New York. \$1.00.)

Magazines.

—The leading article in the *Magazine of Art* for February is on John Russell, R. A., and the frontispiece is from one of his most beautiful portraits. The original of this is supposed to have been Miss Jane Faden, the artist's sister-in-law. There are several reproductions from his best known crayons in this article.

—Henrietta Channing Dana contributes an article to the February *Atlantic* on "What French Girls Study." An attractive historical article in the number is "The Border State Men in the Civil War," by N. S. Shaler.

—The articles in the February *Popular Science Monthly* that relate especially to education are "The Nationalization of University Extension," by Prof. C. Hanford Henderson, and "An Experiment in Education," by Mary Alling Aber.

—The February *Current Literature* gives, as readings from the newest books, scenes from Arthur T. Quiller-Couch's "The Blue Pavilions;" Ouida's "Santa Barbara;" and Opie Read's "Emmett Boniore." The famous chapter for the month is "Francine's Muff," from Henri Murger's "La Vie Boheme."

—In the February number of *Babyhood* Dr. Wm. H. Flint discusses the dislikes of children to certain articles of food and the means of overcoming such antipathies. "Ought Obedience to be Enforced?" "The Tyranny of Whims," "Talking about Children in their hearing," etc., are some of the other topics discussed.

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What will cure consumption after you know you have got it?

You do not know you have got it until the fight has been going on against you for some time. It is serious now.

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have got a good start, and your germ-fighting strength is a good way behind. The question is: Can you now, with the added burden of this disease, recover strength enough to conquer it?

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